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ABSTRACT

This collection of learning activities is intended for use in reinforcing mathematics instruction as it relates to building maintenance. Fifty activity sheets are provided. These are organized into units on the following topics: numeration, adding whole numbers, subtracting whole numbers, multiplying whole numbers, dividing whole numbers, factoring, fractions, decimals, percents, and measurement. A variety of activities are provided, including exercises in spelling numbers correctly, arithmetic exercises, word problems, and practice in working with geometric figures and interpreting charts. Vocabulary words taken from the area of building maintenance are incorporated into the activities. Answers to each activity are also provided. (MN)

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MATH LEARNING ACTIVITY PACKET

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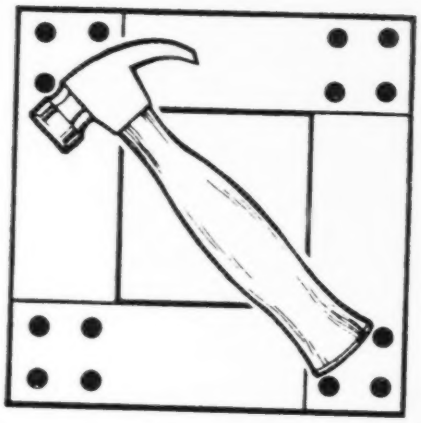

BUILDING MAINTENANCE

Prepared by Shelia I. Grant

OCCUPATIONAL CURRICULUM LAB — EAST TEXAS STATE UNIVERSITY

CED 45-230

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First Edition

1986

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NOTE TO THE INSTRUCTOR

The following Learning Activity Sheets have been developed for Building Maintenance. These Learning Activity Sheets relate directly to each unit of the Self-Contained Math Manual developed by the Occupational Curriculum Laboratory at East Texas State University.

Instructors are encouraged to use these activities to reinforce instruction in the area of math as it relates to the students' individual trade areas.

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BUILDING MAINTENANCE

LEARNING ACTIVITY SHEET

ANSWERS

LEARNING ACTIVITY SHEET 1

Evaluated to the satisfaction of the instructor.

LEARNING ACTIVITY SHEET 2

1. 17 pounds
2. 15 feet
3. 87 shingles
4. 12 workers
5. $5,899.00
6. 2,525 square feet
7. 87 hours
8. 460 square feet
9. $4,080
10. 655 square feet

LEARNING ACTIVITY SHEET 3

1. 13 feet
2. 28 studs
3. 34 (2 x 4's)
4. 1011 square feet
5. 12 cubic yards
6. 149 square feet
7. 123 board feet
8. 563 cubic yards
9. 24 cubic yards
10. 473 square feet

LEARNING ACTIVITY SHEET 4

1. a. 1 foot
   b. 2 inches
   c. 6 hip rafters
   d. 6 ceiling joists
2. a. 14 studs
   b. 20 lbs. of nails
3. a. 56 square feet
   b. 51 square feet
4. a. 3520 feet
   b. 1511 cubic inches
5. a. $38,718
   b. 7 gallons of paint

6. 17 lbs. of nails
7. 13 gallons of paint
8. 272 feet
9. $570.00 profit

LEARNING ACTIVITY SHEET 5

1. 1,613 board feet
2. 1,040 square feet
3. $774.00
4. 5 feet
5. 1,040 square feet
6. $18,000
7. 222,000 board feet
8. 9 workers
9. $60,000
10. 550 square yards

LEARNING ACTIVITY SHEET 6

1. 9
2. 14
3. 18
4. 16
5. 40
6. 30
7. 63
8. 36
9. 24
10. 48
11. 32
12. 81
13. 16
14. 12
15. 8
16. 45
17. 21
18. 72
19. 64
20. 42

LEARNING ACTIVITY SHEET 7

1. $1,350
2. 3,000 shingles
3. 224 hours
4. 96 square yards
5. 1,200 linear feet
6. 325 board feet
7. $4,950
8. $384.00
9. 342 doors
10. 42 workers

LEARNING ACTIVITY SHEET 8

1. a. 2 inches
   b. 3 yards
   c. 1 1/2 or 1.5 feet
   d. 1 3/5 or 1.6 board feet
   e. 1 1/2 or 1.5 windows
   f. 4 doors

2. a. 6 inches
   b. 7 rafters
   c. 8 feet
   d. 4 floor tiles
   e. 5 rafters

3. a. 4 inches
   b. 3 feet
   c. 1.4 rafters

4. a. 11.9
   b. 29 board feet
   c. 3.0 lights

5. a. 323
   b. 3.02

LEARNING ACTIVITY SHEET 9

1. 6 feet lengths
2. 237 rooms
3. 90 hours
4. 49 joists
5. 34 squares
6. 2 decks
7. 10,500 hours
8. 21 braces
9. 19 squares
10. 33 hours

LEARNING ACTIVITY SHEET 10

1. 71.4
2. $1.15
3. 66
4. 77.17
5. 72.5
6. 61.6
7. 8.25

LEARNING ACTIVITY SHEET 11

Evaluated to the satisfaction of the instructor.

LEARNING ACTIVITY SHEET 12

1. 1/4
2. 2/8 or 1/4
3. 3/8
4. 3/8
5. 3/4
6. 1/2
7. 7/8
8. 7/8
9. 3/4
10. 5/8
11. 7/16
12. 5/8
13. 13/16
14. 3/4
15. 3/4
16. 2/3
17. 1/2
18. 2/3
19. 3/5
20. 7/8

LEARNING ACTIVITY SHEET 13

A.
1. 3/4 inch
2. 7/16 inch
3. 1 inch
4. 11/16 inch
5. 1 3/8 inch
6. 5/8 inch
7. 3/4 inch
8. 1/2 inch
9. 3/4 inch
10. 1/4 inch

B.
1. 7/16 inch
2. 7/8 inch
3. 3/8 gallon
4. 7/8 inch
5. 9/16 inch
6. 13/16 inch
7. 5/16 inch
8. 1 9/16 inch
9. 1 1/4 yard
10. 1 3/8 inch

LEARNING ACTIVITY SHEET 14

1. 1 1/6 inch
2. 7/8 pound
3. 4/5 ounce
4. 3 square feet
5. 6 1/8 yards
6. 8 7/12 feet
7. 89 1/4 hours
8. 460 1/4 square feet
9. 25 3/4 pounds
10. 14 5/6 feet

LEARNING ACTIVITY SHEET 15

A.
1. 5/8 inch
2. 3/16 inch
3. 5/32 inch
4. 1/2 inch
5. 3/10 cm.
6. 2/5 m.
7. 1/3 yd.
8. 1/2 liter
9. 1/8 inch
10. 1/8 mile

B.
1. 3/10 cm.
2. 9/32 inch
3. 1/8 in.
4. 5/16 inch
5. 11/16 inch
6. 1 9/16 inch
7. 1/4 ft.
8. 1/4 ft.
9. 9/20 cm.
10. 4/10 m.

LEARNING ACTIVITY SHEET 16

1. 2/3 pound
2. 3 3/4 feet
3. 12 1/2 board feet
4. 7 1/2 square yards
5. 6 1/2 ounces
6. 1/2 inch
7. 3 1/8 feet
8. 6 1/2 inches
9. 1 7/8 inches
10. 60 1/2 pounds

LEARNING ACTIVITY SHEET 17

1. 1/4 inch
2. 1/8 inch
3. 5/16 inch
4. 15/64 inch
5. 3/16 inch
6. 6/25 inch
7. 1/2 inch
8. 7/64 inch
9. 3/8 inch
10. 5/24 inch

LEARNING ACTIVITY SHEET 18

1. 12 1/2 pounds
2. 257 5/16 feet
3. 38 yards
4. 185 5/8 board feet
5. 9 1/4 ounces
6. 61 1/4 inches
7. 18 feet
8. 39 inches
9. 31 1/2 inches
10. 255 1/2 inches

LEARNING ACTIVITY SHEET 19

1. 2 1/16 inch
2. 11 3/7 or 11 anchor bolts
3. 8 pieces of pipe
4. 8 1/8 feet apart
5. 26 1/4 layers of brick

LEARNING ACTIVITY SHEET 20

1. 1 1/6 yard
2. 5 9/10 pounds
3. 1 3/4 ounces
4. 5 7/22 feet
5. 1 11/165 inches
6. 4 table legs
7. 56 pieces
8. 42 boards
9. 96 sheets
10. 108 sheets

LEARNING ACTIVITY SHEET 21

1. four-tenths meter
2. seven-tenths gallon of paint
3. sixty-five hundredths yard of sand
4. thirty-seven hundredths centimeter
5. forty-two hundredths mm.
6. fifty-four hundredths ft. of pipe
7. one and twenty-five hundredths inches
8. two and seventy-five hundredths cm. of pipe
9. one and four hundred thirty-five thousandths ounces
10. four and two hundred twenty-five thousandths inches
11. .6 cm.
12. .75 inch diameter
13. .25 inch
14. 1.5 inch putty knife
15. .3 cm. recess
16. .375 inch mortar joint
17. .0375 pounds of nails
18. .45 liter of paint
19. .625 inch thick board
20. .66 yard of wire mesh

LEARNING ACTIVITY SHEET 22

1. 48.3 cm.
2. 4.03 liters
3. 5.25 m.
4. equal
5. 11.132 cm.
6. 459.6 grams
7. 32.5 feet of carpet
8. 12.495 m of 2 x 4's
9. equal
10. 8.20 ounces
11. .0252
12. .0525
13. 0.252
14. .255
15. .525
16. 5.025
17. 5.225
18. 5.25
19. 52.52
20. 525.5

LEARNING ACTIVITY SHEET 23

1. 1.1 grams of nails
2. 1.5 kg. of screws
3. 10.28 liters of water
4. 16.63 cm. of copper tubing
5. 13.02 m. of rebar
6. 45.57 cm. of 1 x 4's
7. 86.174 mm. of wire
8. 32.066 liters of paint
9. 37.913 square meters
10. 102.835 square decimeters

LEARNING ACTIVITY SHEET 24

1. 6.25 inches
2. 0.677 ounces
3. $2.98
4. 1.138 m.
5. 0.871 inch
6. 1.78 inch
7. $1,636.00
8. 38.85 board feet
9. $969.50
10. 87.08 square yards

LEARNING ACTIVITY SHEET 25

1. 1.013 ounces
2. 0.125 m.
3. 1.5 feet
4. 21.32 pounds
5. 0.885 inches
6. $532.25
7. 227.75 board feet
8. $91,076.75
9. $966.50
10. 323.5 square yards

LEARNING ACTIVITY SHEET 26

1. 38.70
2. 4.1215
3. 12.8405
4. 30.456
5. .02268
6. 0.06044
7. .3395
8. 324.576
9. 39.7308
10. 3,902.25
11. 42,454.845

LEARNING ACTIVITY SHEET 27

1. 9.375 feet
2. 0.2343 ounces
3. $129.35
4. 5,079.1875 pounds
5. 77,015.625 square yards
6. 16,437.5 square feet
7. 10 feet
8. 29.25 feet
9. $323.75
10. 12.5 inches

LEARNING ACTIVITY SHEET 28

1. .02
2. .3
3. .06
4. .005
5. .091
6. $2.03
7. $.21
8. $.25
9. .05
10. .31
11. .01
12. $.54
13. .021
14. .08
15. .11

LEARNING ACTIVITY SHEET 29

1. 1.25 ounces
2. 7.3375 feet
3. 79 square yards
4. 0.2717 m.
5. 0.355 pounds
6. 365.75 hours
7. 5.8181 braces
8. 4,074.074 hours
9. 39 boards
10. 4,182.5833 squares

LEARNING ACTIVITY SHEET 30

1. 4/10
2. 7/10
3. 4 5/10
4. 8 72/100
5. 42 78/100
6. 6 325/1000
7. 15 82/100
8. 32 64/100
9. 60 25/100
10. 6 84/100
11. 4 89/100
12. 16 675/1000
13. 960 3/10
14. 4 683/1000
15. 5 65/100

LEARNING ACTIVITY SHEET 31

1. 0.75
2. 0.875
3. 0.25
4. 0.4375
5. 0.5
6. 3/4
7. 1 3/10
8. 1/4
9. 3 1/2
10. 2 9/20

LEARNING ACTIVITY SHEET 32

1. 0.25
2. 11.25
3. 3/4
4. 1/16
5. 1.5
6. 1/2
7. 3 1/4
8. 21.75
9. 0.125
10. 1.75

LEARNING ACTIVITY SHEET 33

1. 50%
2. 25%
3. 66.6%
4. 37.5%
5. 6.25%
6. 18.75%
7. 62.5%
8. 87.50%
9. 70%
10. 90%
11. 83.3%
12. 33.3%

LEARNING ACTIVITY SHEET 34

1. 3.2
2. 5
3. 3.2
4. 10
5. 2.38
6. 42
7. 58
8. 64
9. 50
10. 40
11. 220
12. 560
13. 320
14. 48
15. 290

LEARNING ACTIVITY SHEET 35

1. 2,112 board feet
2. 1,641.6 square feet
3. 2,484 square feet
4. 3,093.75 square feet
5. 12,505 board feet
6. 1,190 board feet
7. 2,937.5 square feet
8. $29,640
9. $1,040
10. $57,200

LEARNING ACTIVITY SHEET 36

1. $13,750.00
2. 105 pounds
3. $2,252.50
4. $11.50
5. $73.62
6. $1,000.00
7. $282.03
8. $39.06
9. 30 pounds
10. $116,450.00

LEARNING ACTIVITY SHEET 37

1. Flexible tape
2. Combination square or framing square
3. Flexible tape
4. Flexible tape
5. Flexible tape
6. Steel tape

7 - 10 Answers will vary.

LEARNING ACTIVITY SHEET 38

	VOLUME	LENGTH	AREA	WEIGHT	TEMPERATURE
1.		42 inches			
2.	9 cu. yds.				
3.			1450		
4.		39 meters			
5.		82 cm.			
6.		72 yards			
7.				50 lbs.	
8.			2450		
9.	12 cu. yds.				
10.		42 feet			
11.		63 feet			
12.					55° F.
13.	15 gals.				
14.					90° F.
15.	2 pints				
16.				4 grams	

LEARNING ACTIVITY SHEET 39

A.
1. 4 1/3 yards
2. 612 inches
3. 2 meters
4. 2 inches
5. 8 cm.
6. 16 feet
7. 16 yards
8. 20 cm.
9. 741 inches
10. 576 inches
11. 3 1/2 yards
12. 260 cm.
13. 56 mm.
14. 17 1/3 yards
15. 7 1/6 feet
16. 10 1/2 feet
17. 2,376 inches
18. 1/4 meter
19. 12 inches
20. 1,014 inches

B. 1 - 4 Answers will vary

LEARNING ACTIVITY SHEET 40

1.
a. 2 1/4 inches
b. 4 inches
c. 3 3/4 inches
d. 5 7/8 inches
e. 4 1/2 inches

2.
a. 7 cm., 3 mm.
b. 5 cm., 2 mm.
c. 9 cm.
d. 12 cm., 5 mm.
e. 10 cm.

3.
a. 1 inch
b. 3/4 inch
c. 7/8 inch
d. 1 1/4 inch
e. 1/2 inch

4.
a. 36"
b. 56"
c. 80"
d. 568"
e. 18'
f. 20' 8"
g. 89'
h. 6' 4"
i. 148"
j. 52 m.

5.
a. 24'
b. 20'
c. 16
d. 48'
e. 84'

LEARNING ACTIVITY SHEET 41

Evaluated to the satisfaction of the instructor.

LEARNING ACTIVITY SHEET 42

1. 140 feet
2. 40 feet
3. 52 feet
4. 72 inches
5. 6.28 inches
6. 12.56 feet

LEARNING ACTIVITY SHEET 43

1. 44 feet
2. 48 inches
3. 15 feet
4. 47 feet
5. 48 feet
6. 18.84 feet
7. 80 feet
8. 12.56 feet
9. 830 feet
10. a. 13"
    b. 13'
    c. 36'
    d. 80"
    e. 412'

LEARNING ACTIVITY SHEET 44

1. 632 square feet
2. 1,050 square feet
3. 10,752 square feet
4. 15.8 cubic yards
5. 10.6 cubic yards
6. 112 board feet
7. 320 board feet
8. 160 board feet

LEARNING ACTIVITY SHEET 45

1. 280 square feet
2. 144 square feet
3. 300 square feet
4. 9,375 square feet
5. 12,600 square feet
6. 19 1/2 square feet
7. 176 square feet
8. 33 square feet
9. 32 square feet
10. 180 square feet

LEARNING ACTIVITY SHEET 46

1. 576 ounces
2. 700 pounds
3. 186 7/8 pounds
4. $3.07 1/2 or $3.08
5. 14,000 pounds
6. 1,428 4/7
7. 20 square feet
8. 400 pounds
9. a. 1 1/2 pounds
    b. 24,000 pounds
    c. 48 ounces
10. a. 3 centigrams
    b. 20 decagrams
    c. 140 hectograms

LEARNING ACTIVITY SHEET 47

1. 84
2. 160
3. 24 yards
4. 288
5. 125 yards
6. 12

LEARNING ACTIVITY SHEET 48

1. 12 lbs. 5 oz.
2. 6 lbs. 14 oz.
3. 14 T 1,600 lbs.
4. 11 T 600 lbs.
5. 16 lbs.
6. 11 lbs. 2 oz.
7. 3 lbs. 2 oz.
8. 6 lbs. 8 oz.
9. 23 lbs. 3 oz.
10. 17 T 158 oz.
11. 4 lbs. 1 oz.
12. 18 T 400 lbs.

LEARNING ACTIVITY SHEET 49

1. 2 1/2"
2. 3 1/2"
3. 5"
4. 17/64"
5. 31/32"
6. 12 1/2"
7. 9
8. 9
9. 290
10. 100
11. 450
12. 500

LEARNING ACTIVITY SHEET 50

1. a. 8 degrees C
   b. 60 degrees F
   c, 0 degrees C
   d. 140 degrees F
   e. 122 degrees F
2. a. 212 degrees
   b. 100 degrees
3. a. 32 degrees
   b. 100 degrees
4. 40 degrees C

BUILDING MAINTENANCE

LEARNING ACTIVITY SHEET 1--SPELL IT RIGHT

UNIT I--NUMERATION

Directions: Spell the following words orally and in writing.

1. zero voltage
2. one putty knife
3. two screwdrivers
4. three phillips screwdrivers
5. four saw horses
6. five headers
7. six doors
8. seven walls
9. eight tiles
10. nine girders
11. ten corner braces
12. eleven table saws
13. twelve tripods
14. thirteen telescopes
15. fourteen plugs
16. fifteen receptacles
17. sixteen transformers
18. seventeen blades
19. eighteen utility knives
20. nineteen knobs
21. twenty carriage bolts
22. thirty rebars
23. forty feet of sidewalk
24. fifty slabs of concrete
25. sixty cement slabs
26. seventy bags of cement
27. eighty stairwells
28. ninety partitions
29. hundred hand drills
30. thousand push drills
31. million clamps
32. billion files
33. tenths of a kilo
34. hundredths of a foot of mahogany
35. thousandths of an inch of redwood
36. millionths of a yard of oak

BUILDING MAINTENANCE

LEARNING ACTIVITY SHEET 2--ADDITION

UNIT II--ADDING WHOLE NUMBERS

Directions: Read and work the following word problems.

1. If a maintenance worker put 1 lb. of roofing nails, 5 lbs of concrete nails, 7 lbs. of finishing nails, and 3 lbs. of galvanized nails into a box weighing 1 lb., what would be the total weight of the box? _____

2. A worker has three pieces of trim. They have been cut to 5 ft., 3 ft., and 7 ft. How many feet of trim does the worker have all together? _____

3. A maintenance worker needs additional shingles to complete a roofing job. Four stacks of shingles are located. Each stack of shingles contains 37 shingles, 25 shingles, 11 shingles, and 14 shingles, respectively. What is the total number of shingles located? _____

4. The supervisor has a crew of 7 workers. Today, 5 new workers were hired. How many workers are in the crew? _____

5. Materials purchased for repairs cost: $1,507; $2,392; $1,176; and $824. What was the total cost of the materials? _____

6. Three storage buildings require 600 sq. ft., 750 sq. ft., and 1,175 sq. ft. of asphalt shingles respectively. How many square feet (sq. ft.) of shingles are needed for the three storage buildings? _____

7. A crew worked 20 hours, 17 hours, 10 hours, 13 hours, and 27 hours. What is the total number of hours worked? _____

8. What is the total number of square feet of carpet needed to carpet an office complex if the three rooms to be carpeted require 130 sq. ft., 80 sq. ft., and 250 sq. ft., respectively? _____

9. Materials are needed to remodel a building. The cost of the materials is as follows: paint, $75; lumber, $3,798; masonry, $150; hardware, $57. What is the total cost of the materials? _____

10. A maintenance supervisor wishes to purchase ceiling tile for an office building. The rooms measure: waiting room, 120 sq. ft.; lounge, 170 sq. ft.; offices, 125 sq. ft., 110 sq. ft., and 130 sq. ft. What is the total number of square feet of ceiling tile needed? _____

BUILDING MAINTENANCE

LEARNING ACTIVITY SHEET 3--ADDITION

UNIT II--ADDING WHOLE NUMBERS

Directions: Work the following problems by adding the numbers and finding the sum of each.

1. 5 feet
+ 8 feet

2. 12 studs
+ 16 studs

3. 13 (2 x 4's)
17 (2 x 4's)
+ 4 (2 x 4's)

4. 452 square feet
143 square feet
329 square feet
+ 87 square feet

5. 3 cubic feet
+ 9 cubic feet

6. 84 square feet
+ 65 square feet

7. 42 board feet
7 board feet
+ 74 board feet

8. 162 cubic yards
257 cubic yards
88 cubic yards
+ 56 cubic yards

9. What is the total number of cubic yards of concrete needed for this job: the storage building requires 15 cubic yards, the garage requires 5 cubic yards, and the driveway requires 4 cubic yards? _____

10. What is the total area in a building if the storage closet has 30 square feet; the lunchroom - 48 square feet; the work area - 268 square feet; and the bathroom, 127 square feet? _____

BUILDING MAINTENANCE

LEARNING ACTIVITY SHEET 4--SUBTRACTING ITEMS

UNIT III--SUBTRACTING WHOLE NUMBERS

Directions: Work the following problems using the trade terms in the answer.

1. a. 5 feet
   - 4 feet

   b. 8 inches
   - 6 inches

   c. 7 hip rafters
   - 1 hip rafter

   d. 9 ceiling joists
   - 3 ceiling joists

2. a. 43 studs
   - 29 studs

   b. 50 lbs. of nails
   - 30 lbs. of nails

3. a. 342 square feet
   - 286 square feet

   b. 98 square feet
   - 47 square feet

4. a. 5280 feet
   - 1760 feet

   b. 9,869 cubic inches
   - 8,178 cubic inches

5. a. 89,400 dollars
   - 50,682 dollars

   b. 19 gallons of paint
   - 12 gallons of paint

6. A maintenance worker bought a box of nails weighing 50 lbs. Thirty-three pounds were used. How many pounds of nails were left? _____

7. A maintenance worker bought 21 gallons of paint for a job. Eight gallons of paint were used for the job. How many gallons of paint were left? _____

8. A maintenance worker has 850 ft. of 12 x 12 romax wire for a building. Five hundred and seventy-five feet of wire were used to wire three rooms. How many feet of wire are left to finish wiring the building? _____

9. A building maintenance supervisor figured a job remodeling a garage for $1,640.00. Materials for the job cost $1,070.00. How much profit did the building maintenance supervisor make?

_____

BUILDING MAINTENANCE

LEARNING ACTIVITY SHEET 5--SUBTRACTION

UNIT III--SUBTRACTING WHOLE NUMBERS

Directions: Read and work the following word problems.

1. A maintenance supervisor purchased 3,750 board feet of lumber. The crew used 2,137 board feet on the building. How many board feet of lumber are left? _____

2. A maintenance worker needed 2,630 sq. ft. of shingles to repair the roof on a building. He/she has 1,590 sq. ft. of shingles on hand. How many square feet (sq. ft.) of shingles will be needed to complete the job? _____

3. The maintenance firm received a bill for materials totaling $4,524. A check was mailed to the material supplier in the amount of $3,750. What is the amount the maintenance firm now owes on the materials? _____

4. A maintenance worker needs 17 feet of trim to complete a job. Three pieces have been located and are 3 ft., 5 ft., and 4 ft., respectively. How many more feet of trim will the maintenance worker need? _____

5. A maintenance worker needs 2,020 square feet of plywood to put down a subfloor. There are 980 square feet of plywood on hand. How many square feet of plywood must the maintenance worker order? _____

6. A maintenance worker maintains a manufacturing company for $75,000. The materials, labor, and other costs total $57,000. What is the profit? _____

7. The lumber dealer ordered 547,000 board feet of redwood. The first shipment contained 325,000 board feet. How many board feet of redwood should arrive on the next shipment.

8. The supervisor has a work crew or 12 workers. One worker has called in sick and 2 workers are on vacation. How many workers should be working in the crew today? _____

9. The maintenance firm has $97,000 in its checking account. Bills for materials and labor total $37,000. How much money will remain in the account after these bills are paid?

_____

10. The maintenance firm ordered 900 square yards of carpet. The supervisor reported that 350 square yards of carpet had been laid in the new office building. How many square yards of carpet are left? _____

BUILDING MAINTENANCE

LEARNING ACTIVITY SHEET 6--MULTIPLYING ITEMS

UNIT IV--MULTIPLYING WHOLE NUMBERS

Directions: Find the product and check by reversing the order of the factors.

1. $\begin{array}{r} 3 \\ \times\ 3 \\ \hline \end{array}$ moldings

2. $\begin{array}{r} 7 \\ \times\ 2 \\ \hline \end{array}$ keyholes

3. $\begin{array}{r} 6 \\ \times\ 3 \\ \hline \end{array}$ casings

4. $\begin{array}{r} 4 \\ \times\ 4 \\ \hline \end{array}$ boxes

5. $\begin{array}{r} 8 \\ \times\ 5 \\ \hline \end{array}$ ridges

6. $\begin{array}{r} 5 \\ \times\ 6 \\ \hline \end{array}$ hip jacks

7. $\begin{array}{r} 9 \\ \times\ 7 \\ \hline \end{array}$ nails

8. $\begin{array}{r} 4 \\ \times\ 9 \\ \hline \end{array}$ shutters

9. $\begin{array}{r} 3 \\ \times\ 8 \\ \hline \end{array}$ fuses

10. $\begin{array}{r} 6 \\ \times\ 8 \\ \hline \end{array}$ dry-cell batteries

11. $\begin{array}{r} 4 \\ \times\ 8 \\ \hline \end{array}$ conductors

12. $\begin{array}{r} 9 \\ \times\ 9 \\ \hline \end{array}$ batteries

13. 2 x 8 = _____ hinges

14. 3 x 4 = _____ toggle bolts

15. 8 x 1 = _____ appliances

16. 9 x 5 = _____ armored cables

17. 7 x 3 = _____ feet of cedar

18. 9 x 8 = _____ feet of fir

19. 8 x 8 = _____ feet of maple

20. 7 x 6 = _____ yards of redwood

BUILDING MAINTENANCE

LEARNING ACTIVITY SHEET 7--MULTIPLICATION

UNIT IV--MULTIPLYING WHOLE NUMBERS

Directions: Read and work the following word problems.

1. A redwood deck cost $450 to build. How much would 3 decks cost? _____

2. A maintenance firm ordered 12 bundles of shingles. Each bundle contained 250 shingles. How many shingles were in the total order? _____

3. A maintenance crew of 7 worked 4 days. Each member of the crew worked 8 hours each day. What was the total number of hours worked by the maintenance crew? _____

4. If a maintenance worker cleans 12 square yards of carpet per hour, how many square yards of carpet could the maintenance worker clean in 8 hours? _____

5. How many linear feet of trim are in 8 bundles, each containing 15 pieces which are 10 feet long? _____

6. In repairing a loading dock, 25 board feet of lumber are used. How many board feet of lumber will be required to repair 13 loading docks? _____

7. A maintenance supervisor figured that labor would cost $90 per day for one worker. What would be the total labor cost for 5 days if there are 11 workers are employed? _____

8. Find the cost of 12 squares of asphalt shingles at $32.00 per square. (A square is 100 square feet.) _____

9. Each office in the new building will have 2 doors. How many doors will be needed to complete 171 offices? _____

10. The supervisor has 6 crews working. Each crew has 7 workers. How many workers does the supervisor have? _____

BUILDING MAINTENANCE

LEARNING ACTIVITY SHEET 8--DIVIDING ITEMS

UNIT V--DIVIDING WHOLE NUMBERS

Directions: Find the answer to the nearest tenth.

EXAMPLE: $3\overline{)10} = 3\overline{)10.0}$ → 3.3, 9, 1.0

1. a. $2\overline{)4}$ inches
   b. $3\overline{)9}$ yards
   c. $4\overline{)6}$ feet
   d. $5\overline{)8}$ board feet
   e. $6\overline{)9}$ windows
   f. $2\overline{)8}$ doors

2. a. $2\overline{)12}$ inches
   b. $9\overline{)63}$ rafters
   c. $2\overline{)16}$ feet
   d. $7\overline{)28}$ floor tiles
   e. $3\overline{)15}$ rafters

3. a. $12\overline{)48}$ inches
   b. $26\overline{)78}$ feet
   c. $14\overline{)16}$ rafters

4. a. $24\overline{)286 \text{ miles}}$

b. $27\overline{)783 \text{ board feet}}$

c. $306\overline{)927 \text{ lights}}$

5. a. $12\overline{)3876}$

b. $3240\overline{)9786}$

BUILDING MAINTENANCE

LEARNING ACTIVITY SHEET 9--DIVISION

UNIT V--DIVIDING WHOLE NUMBERS

Directions: Read and work the following word problems.

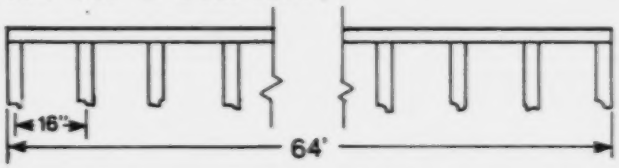
1. A maintenance worker has a 2 x 6, 20 feet in length. How many 3 foot lengths can be cut from this one piece of lumber? _____

2. A maintenance firm has 3,320 square yards of carpet on hand. How many rooms can be carpeted if one room takes 14 square yards of carpet? _____

3. How many hours would it take to lay 2,250 square feet of tile if 25 square feet can be laid in one hour? _____

4. How many joists spaced 16 inches o.c. (on center) will be required for a floor 64 feet long? _____

   (NOTE: Begin by changing feet to inches. Also add one joist for a starter.)



5. How many squares of asphalt shingles can be put down if you have 3,400 square feet of shingles? (A square is 100 square feet.) _____

6. How many redwood decks can be built for $1,200 if one deck costs $450.00? _____

7. A maintenance firm has $147,000 in the budget for labor. How many hours of labor can be hired if labor is paid at $14.00 per hour? _____

8. How many 16-inch braces can be cut from a piece of lumber 340 inches long? (Do not allow for saw kerfs.) _____

9. If 504 galvanized nails are required to apply a square of asphalt shingles, how many squares can be applied if you have 9,500 galvanized nails? _____

10. A maintenance firm has 5,280 square feet of vat-type insulation. How long will it take to install the insulation at the rate of 160 square feet per hour? _____

BUILDING MAINTENANCE

LEARNING ACTIVITY SHEET 10--ADDING AND DIVIDING

UNIT V--DIVIDING WHOLE NUMBERS

Directions: Find the sum and divide by number of numerical units.

1. Juan obtained the following measurements from several panels: 36, 54, 88, 91, and 88. Find the mean of the walls.

_____

2. Mary purchased tiles at a price of $1.10, $1.22, $1.33, $1.15, and $.95. What was the mean price of the tiles?

_____

3. Jack received the compression measurements as 25, 92, 34, 94, and 85. Find the mean.

_____

4. The temperatures in the voltage meters for one week were 60, 75, 43, 89, 71, 65, and 60. What was the mean temperature for the week?

_____

5. The perpendicular dimensions of the doors were: 70, 80, 63, 97, 58, 62, 75, and 75. Find the mean.

_____

6. The total yardage of the land was 60, 55, 83, 49, and 61. What was the average number of yards?

_____

7. The cubic measurement of the room was 7 yards, 8 yards, 6 yards, and 12 yards. What was the average cubic yards of the room?

_____

BUILDING MAINTENANCE

LEARNING ACTIVITY SHEET 11--DRAWING PARTS

UNIT VI--FRACTIONS

Directions: Draw a board and divide it into its fractional parts.

EXAMPLE: 3/6

1. 7/8

2. 1/2

3. 6/7

4. 2/3

5. 4/5

6. 2/5

7. 1/8

8. 3/8

9. 5/12

10. 4/7

BUILDING MAINTENANCE

LEARNING ACTIVITY SHEET 12--GREATER THAN/LESS THAN

UNIT VI--FRACTIONS

Directions: Circle the greater of the two fractions given.

1. 1/8 or 1/4
2. 2/8 or 1/16
3. 1/16 or 3/8
4. 1/4 or 3/8
5. 5/8 or 3/4
6. 1/2 or 3/8
7. 7/8 or 11/16
8. 13/16 or 7/8
9. 3/4 or 5/8
10. 9/16 or 5/8
11. 7/16 or 1/4
12. 5/8 or 3/8
13. 5/8 or 13/16
14. 11/16 or 3/4
15. 5/8 or 3/4
16. 2/3 or 1/2
17. 1/2 or 1/3
18. 2/3 or 3/8
19. 5/10 or 3/5
20. 5/12 or 7/8

BUILDING MAINTENANCE

LEARNING ACTIVITY SHEET 13--REDUCING

UNIT VI--FRACTIONS

Directions: Add the following fractions with like denominators. Reduce answers to the lowest common fraction.

A.
1. 1/4 in. + 2/4 in. = _____
2. 5/16 in. + 2/16 in. = _____
3. 2/8 in. + 6/8 in. = _____
4. 7/16 in. + 4/16 in. = _____
5. 7/16 in. + 15/16 in. = _____
6. 3/8 in. + 2/8 in. = _____
7. 5/16 in. + 7/16 in. = _____
8. 1/8 in. + 3/8 in. = _____
9. 9/16 in. + 3/16 in. = _____
10. 1/32 in. + 7/32 in. = _____

B. Add the following fractions with unlike denominators. Find the common denominator and reduce to the lowest fraction.

1. 2/8 in. + 3/16 in. = _____
2. 5/8 in. + 4/16 in. = _____
3. 1/4 in. + 1/8 in. = _____
4. 1/2 in. + 3/8 in. = _____
5. 2/8 in. + 5/16 in. = _____
6. 3/16 in. + 5/8 in. = _____
7. 1/8 in. + 3/16 in. = _____
8. 5/8 in. + 15/16 in. = _____
9. 3/4 in. + 1/2 in. = _____
10. 5/8 in. + 3/4 in. = _____

BUILDING MAINTENANCE

LEARNING ACTIVITY SHEET 14--ADDING FRACTIONS

UNIT VI--FRACTIONS

Add the following:

1. 1/2 inch + 2/3 inch =

2. 5/8 pound + 1/4 pound =

3. 1/5 ounce + 3/5 ounce =

4. 2 1/4 square feet + 3/4 square foot =

5. 3 7/8 yards + 2 1/4 yards =

Read and work the following problems.

6. A worker has three pieces of trim. They have been cut to 2 1/2 feet, 1 3/4 feet, and 4 1/3 feet. How many feet of trim does the worker have all together? _____

7. A crew of four worked 5 3/4 hours, 25 1/2 hours, 17 1/4 hours, and 40 3/4 hours. What is the total number of hours worked? _____

8. What is the total number of square feet of carpet needed to carpet a building if three rooms to be carpeted require 135 1/2 sq. ft., 79 3/4 sq. ft., and 245 sq. ft., repectively?

   _____

9. A maintenance worker made the following orders for nails: 2 3/4 pounds of roofing nails, 4 1/2 pounds of concrete nails, 6 1/4 pounds of finishing nails, and 12 1/4 pounds of galvanized nails. What is the total weight of nails ordered?

   _____

10. The following pieces of lumber were used in constructing a deck: 2 1/3 feet, 2 3/4 feet, 4 1/2 feet, and 5 1/4 feet. What was the total length of these pieces of lumber?

    _____

BUILDING MAINTENANCE

LEARNING ACTIVITY SHEET 15--SUBTRACTING FRACTIONS

UNIT VI--FRACTIONS

Directions: Subtract the following like fractions and reduce the answer to the lowest fraction.

EXAMPLE: 5/16 - 3/16 = 2/16 = 1/8

A.
1. 7/8 in. - 2/8 in. = _____
2. 5/16 in. - 2/16 in. = _____
3. 7/32 in. - 2/32 in. = _____
4. 3/4 in. - 1/4 in. = _____
5. 5/10 in. - 2/10 in. = _____
6. 8/10 m. - 4/10 m. = _____
7. 2/3 yd. - 1/3 yd. = _____
8. 5/8 liter - 1/8 liter = _____
9. 9/16 in. - 7/16 in. = _____
10. 3/16 mile - 1/16 mile = _____

B. Find the common denominator and subtract the following fractions; then reduce to the lowest fractions.

1. 5/10 cm. - 4/20 cm. = _____
2. 31/32 yd. - 11/16 yd. = _____
3. 5/8 in. - 2/4 in. = _____
4. 7/8 in. - 9/16 in. = _____
5. 1 3/16 in. - 1/2 in. = _____
6. 2 5/8 in. - 1 1/16 in. = _____
7. 1/2 ft. - 1/4 ft. = _____
8. 3/4 ft. - 1/2 ft. = _____
9. 9/10 cm. - 9/20 cm. = _____
10. 4/5 m. - 4/10 m. = _____

BUILDING MAINTENANCE

LEARNING ACTIVITY SHEET 16--SUBTRACTING FRACTIONS

UNIT VI--FRACTIONS

Subtract the following:

1. 1 1/3 pound from 2 pounds =

2. 3 1/8 feet from 6 7/8 feet =

3. 22 1/2 board feet from 35 board feet =

4. 14 3/8 square yards from 21 7/8 square yards =

5. 5 1/4 ounces from 11 3/4 ounces =

Read and work the following problems.

6. A vanity top is laminated with 1/4-inch tile. The total thickness is 3/4-inch. What is the thickness of the top? _____

7. A board was 6 feet in length; 2 7/8 feet have been cut off. How long is the board now? _____

8. The maintenance worker needs a board 83 1/2 inches long. The board on hand is 90 inches. How many inches will remain after the amount needed is removed? _____

9. Find the thickness of a rough board 2 inches thick after 1/8 inch has been planed off both sides. _____

10. The maintenance firm purchased 97 pounds of roofing nails. If 36 1/2 pounds are left, how many pounds of roofing nails have been used? _____

BUILDING MAINTENANCE

LEARNING ACTIVITY SHEET 17--MULTIPLYING FRACTIONS

UNIT VI--FRACTIONS

Directions: Multiply the following fractions and reduce answer to the lowest fraction.

EXAMPLE: 2/3 yd. x 1/2 yd. = 2/6 = 1/3 yd.

1. 1/2 in. x 1/2 in. = _____

2. 1/4 in. x 1/2 in. = _____

3. 5/8 in. x 1/2 in. = _____

4. 5/8 in. x 3/8 in. = _____

5. 2/8 in. x 3/4 in. = _____

6. 4/10 in. x 6/10 in. = _____

7. 2/3 in. x 3/4 in. = _____

8. 1/8 in. x 7/8 in. = _____

9. 3/4 in. x 1/2 in. = _____

10. 5/6 in. x 1/4 in. = _____

BUILDING MAINTENANCE

LEARNING ACTIVITY SHEET 18--MULTIPLYING FRACTIONS

UNIT VI--FRACTIONS

Multiply the following:

1. 2 1/2 pounds x 5 = _____

2. 22 3/8 feet x 11 1/2 = _____

3. 12 2/3 yards x 3 = _____

4. 6 7/8 board feet x 27 = _____

5. 2 2/5 ounces x 3 7/8 = _____

Read and work the following problems.

6. The deck is covered by 35 boards. Each board is 1 3/4 inches wide. What is the total width of the deck? _____

7. If the total length of a hallway is 27 feet, how long would 2/3 of the hallway be? _____

8. A maintenance firm has a stack of 3/4-inch plywood. If there are 52 pieces of plywood, how high would the stack be? _____

9. A flight of 27 stairs has 4 risers, each 7 7/8 inches high. What is the total rise of the stairs? _____

10. What length of 1" x 12" material is required to make 7 shelves each 36 1/2 inches long? _____

BUILDING MAINTENANCE

LEARNING ACTIVITY SHEET 19--DIVIDING FRACTIONS

UNIT VI--FRACTIONS

Directions: Answer the following questions.

EXAMPLE: What is half of 7/8 of an inch?
(NOTE: Always invert the second fraction before multiplying.)

$7/8 \div 2 = 7/8 \times 1/2 = 7/16$ inch

1. A 2 x 4 is 8 1/4 feet long. It is necessary to divide it into 4 parts. How long is each piece? _____

2. A building has a slab with a perimeter of 40 ft. Anchor bolts are to be placed every 3 1/2 feet on the slab. How many anchor bolts will be needed? _____

3. A maintenance worker has 14 ft. of pipe, and needs to cut it into 1 3/4 ft. lengths. How many pieces of pipe that are 1 3/4 ft long can be cut? _____

4. A maintenance worker needs to put in two light fixtures spaced evenly in a room that is 16 1/4 feet long. How far apart should the maintenance worker put the lights?
_____

5. A building has a wall 8 3/4 feet high, and each brick and mortar joint is 1/3 feet. How many layers of brick will be needed to brick the wall? _____

BUILDING MAINTENANCE

LEARNING ACTIVITY SHEET 20--DIVIDING FRACTIONS

UNIT VI--FRACTIONS

Divide each of the following:

1. 3 1/2 yards ÷ 3 = _____

2. 14 3/4 pounds ÷ 2 1/2 = _____

3. 7/8 ounces ÷ 1/2 = _____

4. 29 1/4 feet ÷ 5 1/2 = _____

5. 5 1/16 inches ÷ 3 = _____

Read and work the following problems.

6. How many table legs 2 1/2 feet long can be cut from a length of stock 10 feet long? Make no allowance for saw cuts.
_____

7. How many pieces of 3/4-inch plywood are in a stack 3 feet, 6 inches high? _____

8. How many boards 4 3/4 inches wide will it take to cover a deck 16 1/2 feet wide? _____

9. Determine the number of sheets of 1/4-inch paneling in a stack 24 inches high. _____

10. Determine the number of sheets of 1/2-inch plywood in a stack 54 inches high. _____

BUILDING MAINTENANCE

LEARNING ACTIVITY SHEET 21--WORKING WITH DECIMALS

UNIT VIII--DECIMALS

Directions: Write the following decimals in word form.

1. .4 meters _____
2. .7 gallons of paint _____
3. .65 yards of sand _____
4. .37 cm. _____
5. .42 mm. _____
6. .54 feet of pipe _____
7. 1.25 inches _____
8. 2.75 cm. of pipe _____
9. 1.435 ounces of paint _____
10. 4.225 inches _____

Write the decimal form of the following fractions.

EXAMPLE: 2/5 = .4

11. 3/5 cm. = _____
12. 3/4 inch diameter = _____
13. 1/4 inch = _____
14. 1 1/2 inch putty knife = _____
15. 3/10 cm. recess = _____
16. 3/8 in. mortar joint = _____
17. 15/16 lbs. of nails = _____
18. 45/100 liters of paint = _____
19. 5/8 inch thick board = _____
20. 2/3 yard wire mesh = _____

BUILDING MAINTENANCE

LEARNING ACTIVITY SHEET 22--GREATER THAN/LESS THAN

UNIT VII--DECIMALS

Directions: Write in the blank the greater of the two decimals. If they are equal, write equal in the blank.

1. 48.3 cm. or 4.83 cm. _____
2. 4.03 liters or 4.003 liters _____
3. 5.234 m. or 5.25 m. _____
4. 628.5 feet or 628.500 feet _____
5. 11.123 cm. or 11.132 cm. _____
6. 459.6 grams or 459.55 grams _____
7. 32.5 ft. of carpet or 3.245 ft. of carpet _____
8. 12.34 m. of 2 x 4's or 12.495 m. of 2 x 4's _____
9. 4.5 lbs. or 4.50 lbs. _____
10. 8.02 ounces or 8.20 ounces _____

Place the following in order starting with the smallest valued number. 5.25, 5.025, 52.52, 5.225, .525, .0525, .0252, 0.252, 525.5, and .255.

11. _____
12. _____
13. _____
14. _____
15. _____
16. _____
17. _____
18. _____
19. _____
20. _____

BUILDING MAINTENANCE

LEARNING ACTIVITY SHEET 23--ADDING AND SUBTRACTING DECIMALS

UNIT VII--DECIMALS

Directions: Add the following decimals.

(NOTE: Always keep decimal points straight or vertical when adding or subtracting.)

1. .4 gram nails
+ .7 gram nails

2. .8 kg. of screws
+ .7 kg. of screws

3. 4.78 liters of water
+ 5.50 liters of water

4. 7.08 cm. of copper tubing
+ 9.55 cm. of copper tubing

5. 5.54 m. of rebar
+ 7.48 m. of rebar

6. 12.72 cm. of 1 x 4's
+ 32.85 cm. of 1 x 4's

7. 13.742 mm. of wire
+ 72.432 mm. of wire

8. 20.742 liters of paint
+ 11.324 liters of paint

9. There are 78.493 sq. meters of office space in the office complex. The executive office has 40,580 sq. meters. How many sq. meters are in the other offices? _____

10. A formica top in a break room has 87.495 square decimeters. A bathroom formica top has 15.340 square decimeters. What is the total number of square decimeters in the two cabinet tops? _____

BUILDING MAINTENANCE

LEARNING ACTIVITY SHEET 24--ADDING DECIMALS

UNIT VII--DECIMALS

Add the following:

1. 3.75 inches
   + 2.50 inches

2. 0.625 ounces
   + 0.052 ounces

3. $2.51
   + .47

4. 0.627 m.
   + 0.511 m.

5. 0.523 inches
   0.017 inches
   + 0.331 inches

Read and work the following problems.

6. A counter top 1.53 inches thick is covered with tile 0.25 inches thick. How thick is the counter top? _____

7. The maintenance supervisor figured the following on the cost of the project: $387.50, labor; $962.25, materials; $35.75, overhead; and $250.50, profit. What will be the total cost of the project? _____

8. The following pieces of lumber were used. The lumber measured 7.35 board feet, 3.25 board feet, 11.75 board feet, and 16.50 board feet. How many board feet of lumber were used? _____

9. The maintenance worker installed new cafeteria appliances. Total the following bill for materials:

Range	$595.50
Dishwasher	$275.25
Disposer	$ 98.75

_____

10. How many square yards of carpet would you have if you added all of the following: 21.25 square yards, 33.75 square yards, 14.33 square yards, and 17.75 square yards?

_____

BUILDING MAINTENANCE

LEARNING ACTIVITY SHEET 25--SUBTRACTING DECIMALS

UNIT VII--DECIMALS

Subtract the following:

1. 2.037 ounces from 3.05 ounces =

2. 0.625 m. from 0.75 m. =

3. 3.75 feet from 5.25 feet =

4. 2.5 pounds from 23.82 pounds =

5. 0.365 inches from 1.25 inches =

Read and work the following problems.

6. A maintenance firm charges $2,508.75 to maintain a storage building. Labor and material costs are $1,976.50. What is the profit?

_____

7. A maintenance firm ordered 875.5 board feet of white pine. The shipment sent had 647.75 board feet. How many board feet of white pine was the order short?

_____

8. The maintenance firm has $134,375.50 in the company checking account. If an invoice for materials of $43,298.75 is paid, what will be the balance in the checking account?

_____

9. An estimate of $2,700.75 was submitted on a small construction project. Cost figured included materials, $983.50 and labor, $750.75. How much profit was included in the estimate?

_____

10. A carpet order of 250.25 square yards was shipped to a new project. Carpet needed for the job was 573.75 square yards. How many additional square yards of carpet were needed to complete the job?

_____

BUILDING MAINTENANCE

LEARNING ACTIVITY SHEET 26--MULTIPLYING DECIMALS

UNIT VII--DECIMALS

Directions: Multiply the following decimals.

(NOTE: When multiplying decimals, always add the number of decimal places in your problem and use the same number in your answer.)

EXAMPLE:
$$\begin{array}{r} 4.32 \\ \times\ .7 \\ \hline 3.024 \end{array}$$
This number has 2 decimal places
This number has 1 decimal place

1. $\begin{array}{r} 4.5 \text{ cm.} \\ \times\ 8.6 \end{array}$

2. $\begin{array}{r} 82.43 \text{ meters} \\ \times\ .05 \end{array}$

3. $\begin{array}{r} 42.1 \text{ liters} \\ \times\ .305 \end{array}$

4. $\begin{array}{r} 7.20 \text{ mm.} \\ \times\ 4.23 \end{array}$

5. $\begin{array}{r} .504 \\ \times\ .045 \end{array}$

6. $\begin{array}{r} 7.555 \text{ cm.} \\ \times\ .008 \end{array}$

7. $\begin{array}{r} .485 \text{ meter} \\ \times\ .7 \end{array}$

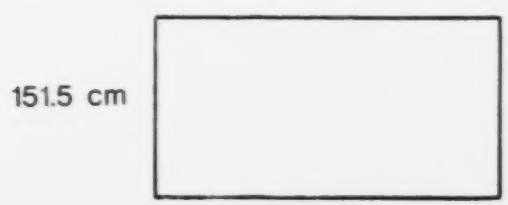
8. $\begin{array}{r} 772.8 \text{ dm.} \\ \times\ .42 \end{array}$

9. $\begin{array}{r} 4.52 \text{ kilometers} \\ \times\ 8.79 \text{ kilometers} \end{array}$

10. $\begin{array}{r} 82.5 \text{ cm.} \\ \times\ 47.3 \text{ cm.} \end{array}$

11. What is the area of the following wall if it is 280.23 cm. by 151.5 cm.?

NOTE: Area = Length x Width



BUILDING MAINTENANCE

LEARNING ACTIVITY SHEET 27--MULTIPLYING DECIMALS

UNIT VII--DECIMALS

Multiply the following: (Carry to four places past the decimal point if needed.)

1. 2.50 feet x 3.75 =

2. 0.625 oz. x 0.375 =

3. $32.50 x 3.98 =

4. 197.25 pounds x 25.75 =

5. 39.75 x 1,937.5 sq. yards =

Read and work the following problems.

6. If 3,287.5 square feet of shingles are needed to roof one storage building, how many square feet of shingles will be required to roof 5 storage buildings of the same size?
_____

7. One table leg measures 2.5 feet. How many feet of stock would be required to make 4 table legs? _____

8. Each shelf measures 3.25 feet in length. How many feet of lumber would you need to make 9 shelves? _____

9. Determine the cost of 25 sheets of 3/4-inch plywood if one sheet costs $12.95. _____

10. One sheet of oak paneling is .25 inches thick. How high would a stack of 50 sheets of oak paneling be? _____

BUILDING MAINTENANCE

LEARNING ACTIVITY SHEET 28--DIVIDING DECIMALS

UNIT VII--DECIMALS

Directions: Divide the following and check by multiplication.

EXAMPLE:

$$4\overline{)\,.8}\quad .2 \qquad\qquad 4\overline{)\,.12}\quad .03$$

$$\underline{8} \qquad\qquad \underline{12}$$

1. $5\overline{)\,.10}$

2. $3\overline{)\,.9}$

3. $2\overline{)\,.12}$

4. $25\overline{)\,.125}$

5. $9\overline{)\,.819}$

6. $4\overline{)\,\$8.12}$

7. $15\overline{)\,\$3.15}$

8. $20\overline{)\,\$5.00}$

9. $5\overline{)\,.25}$

10. $6\overline{)\,1.86}$

11. $12\overline{)\,.12}$

12. $8\overline{)\,\$4.32}$

13. $11\overline{)\,.231}$

14. $6\overline{)\,.48}$

15. $2\overline{)\,.22}$

BUILDING MAINTENANCE

LEARNING ACTIVITY SHEET 29--DIVIDING DECIMALS

UNIT VII--DECIMALS

Divide the following: (Carry to four places past the decimal point.)

1. 3.75 ounces ÷ 3 =

2. 29.35 feet ÷ 4 =

3. 197.5 square yards ÷ 2.5 =

4. 0.0625 m. ÷ .23 =

5. 3.2 pounds ÷ 9 =

Read and work the following problems.

6. How many hours would it take to lay 365.75 square yards of carpet if 9 square feet can be laid in one hour? _____

7. If you have a 2 x 4, 16 feet in length, how many 2.75-feet braces can be cut? _____

8. A maintenance firm has $55,000 in the budget for labor. How many labor hours can be paid at $13.50 per hour? _____

9. How many 3.5-inch boards will be required to cover a deck 136.5 inches wide? _____

10. If 12,547.75 squares of shingles are to be divided between 3 projects, how many squares of shingles will go to each project? _____

BUILDING MAINTENANCE

LEARNING ACTIVITY SHEET 30--DECIMALS TO FRACTIONS

UNIT VII--DECIMALS

Directions: Change the following decimal fractions to common fractions.

1. .4 meter rebar _____
2. .7 meter of 1" pipe _____
3. 4.5 cm. of copper tubing _____
4. 8.72 cm. of sewer pipe _____
5. 42.78 cm. of electrical wire _____
6. 6.325 kilometer of 3/14 plastic pipe _____
7. 15.82 cm. of 1 x 4 _____
8. 32.64 cm. of 2 x 4 _____
9. 60.25 cm. of 2 x 4 _____
10. 6.84 mm. of wall space _____
11. 4.89 square meters _____
12. 16.675 square meters _____
13. 960.3 square cm. of wallpaper _____
14. 4.683 cm. of floor tile _____
15. 5.65 meter of copper tubing _____

BUILDING MAINTENANCE

LEARNING ACTIVITY SHEET 31--FRACTIONS/DECIMALS

UNIT VII--DECIMALS

A. Change the following fractions to decimals.

1. 3/4 feet _____
2. 7/8 ounces _____
3. 1/4 yard _____
4. 7/16 inch _____
5. 1/2 pound _____

B. Change the following decimals to fractions.

6. 0.75 ounce _____
7. 1.3 inches _____
8. 0.25 pound _____
9. 3.5 feet _____
10. 2.45 yards _____

BUILDING MAINTENANCE

LEARNING ACTIVITY SHEET 32--FRACTION/DECIMAL

UNIT VII--DECIMALS

Directions: Read and work the following problems.

1. The thickness of a sheet of oak paneling is 1/4 inch. Write this dimension in decimal form. _____

2. The width of a cedar board is 11 1/4 inches. Write this dimension in decimal form. _____

3. The thickness of a sheet of plywood is .75 inch. Express this dimension as a common fraction. _____

4. The plastic for the counter top is 0.625. Express this dimension as a common fraction. _____

5. The counter top is 1 1/2 inches thick. Express this dimension in decimal form. _____

6. A piece of carpet pad is .5 inches thick. Write this dimension as a common fraction. _____

7. To put down 100 square feet of 1" x 10" subflooring, approximately 3.25 pounds of nails are needed. Express this dimension as a common fraction. _____

8. Find the length of a piece of 21 3/4-foot walnut lumber in decimal form. _____

9. Find the thickness in decimal form of a piece of asphalt tile 1/8-inch thick. _____

10. The actual thickness of a 2" x 4" is 1 3/4 inches. Write this dimension in decimal form. _____

BUILDING MAINTENANCE

LEARNING ACTIVITY SHEET 33--FRACTIONS TO PERCENTS

UNIT VIII--PERCENTS

1. 1/2 = _____
2. 1/4 = _____
3. 2/3 = _____
4. 3/8 = _____
5. 1/16 = _____
6. 3/16 = _____
7. 5/8 = _____
8. 7/8 = _____
9. 7/10 = _____
10. 9/10 = _____
11. 5/6 = _____
12. 1/3 = _____

BUILDING MAINTENANCE

LEARNING ACTIVITY SHEET 34--FINDING PERCENTS

UNIT VIII--PERCENTS

Directions: Multiply the following to find the percents.

(NOTE: Percent means part of 100. 20/100 = .20 - 20% Always put decimal two places from right when writing percents.)

EXAMPLE: 3% of 90 =

$$\begin{array}{r} 90 \\ \times\ 3\% \\ \hline 2.70 \end{array}$$

1. 4% of 80 studs = _____
2. 10% of 50 feet of wire = _____
3. 80% of 4 cubic feet of concrete wire = _____
4. 25% of 40 nails = _____
5. 7% of 34 feet of pipe = _____

Find the following percents.

EXAMPLE: _____% of 100 = 30. Divide 100 into 30 to get the % needed for the answer.

6. _____% of 100 feet of pipe = 42
7. _____% of 38 inches of copper tubing = 22
8. _____% of 75 pounds of nails = 48
9. _____% of 32 studs = 16
10. _____% of 50 square feet = 20

Fill in the blank in the following problems.

EXAMPLE: 5% of _____ = 50. Divide 5 into 100; then multiply your answer (20) times 50. (50 x 20 = 1000.)

11. 10% of _____ = 22
12. 5% of _____ = 28

13. 25% of _____ = 80

14. 50% of _____ = 24

15. 20% of _____ = 58

BUILDING MAINTENANCE

LEARNING ACTIVITY SHEET 35--PERCENTS

UNIT VIII--PERCENTS

In the building maintenance trade you often allow a percentage for waste in cutting, which must be kept in mind when figuring materials needed. Read and work the following problems.

1. How many board feet of roofing lumber should be ordered if you need 1,760 board feet. Allow 20% for waste. _____

2. A total of 1,520 square feet of wall space is to be covered with insulation board. How many square feet of insulation board should be ordered if you allow 8% for waste?

   _____

3. Determine the number of square feet of floor felt you will need to order if the area of the floor is 2,160 square feet. Allow 15% for waste. _____

4. A floor is to be covered with subflooring laid diagonally. How many square feet of subflooring should be ordered to cover 2,475 square feet of floor space? Allow 25% for waste.

   _____

5. If 18% is wasted in milling, how many actual board feet of lumber would you receive if you ordered 15,250 board feet of rough lumber following milling? _____

6. A maintenance firm estimates that 952 board feet of flooring will be needed. If 25% is allowed for waste, how many board feet of flooring will be ordered? _____

7. If two office buildings are being remodeled, and subflooring of 1,175 square feet is needed for each building, how much subflooring should be ordered? Allow 25% for waste.

   _____

8. A maintenance firm maintains the office building of a company at a total price of $247,000. If 12% profit was made, how much was the profit? _____

9. If labor is 32% of a cost estimate of $3,250 for a job, how much will labor cost? _____

10. A maintenance firm maintains a business for $65,000. If a 12% profit was made, what was the actual cost of the maintenance to the maintenance firm? _____

BUILDING MAINTENANCE

LEARNING ACTIVITY SHEET 36--PERCENTS

UNIT VIII--PERCENTS

Directions: Read and work the following problems.

1. You are contracting to do maintenance for a business. You must allow 2% of the total cost for employee benefits. If the benefits cost $275.00, what will be the total cost of the maintenance? _____

2. You are using 875 pounds of cement. If when you make mortar you use lime equal to 12% of the cement, how much lime will you use? _____

3. A maintenance firm is making up an order for materials. If the order is over $2,000, a 15% discount is given. The material order totals $2,650. What will be the cost to the maintenance firm? _____

4. A maintenance firm receives a bill for materials ordered. It states that a 2% discount will be given if the account is paid within 30 days. What will be the savings to the maintenance firm on a bill of $575 if it is paid within 30 days? _____

5. You wish to purchase a tool box marked $99.50 less 25% discount. What will be the cost of the tool box? _____

6. The net cost for materials is $880.00, with a discount on the retail price of 12%. What is the retail price? _____

7. A 2% penalty will be added to the bill for materials if not paid within 60 days. If the bill is $276.50, what will the bill be after 60 days if not paid? _____

8. The list price for window screens is $5.25 each. What would be the cost of 8 screens with discounts of 7%? _____

9. In mixing mortar you use lime equal to 12% of the cement. If you are using 250 pounds of cement, how much lime would you use? _____

10. A maintenance supervisor will be ordering materials at $137,000.00. A 15% discount will be given on the order. What will be the cost of the materials? _____

BUILDING MAINTENANCE

LEARNING ACTIVITY SHEET 37--MEASURE IT RIGHT

UNIT IX--MEASUREMENT

Directions: Choose the correct measuring device for each of the following problems.

FLEXIBLE TAPE	FRAMING SQUARE
COMBINATION SQUARE	STEEL TAPE
TRY SQUARE	

1. What measuring device would you use to measure the length of each side of Figure A? _____
2. What device would you use to check the corners on the square in Figure A? _____
3. What device would you use to measure the length of studs? _____
4. What device would you use to lay out the plates (the distance between each stud)? _____
5. What device would you use to measure the size of a room for installing carpet? _____
6. Which measuring device would you use to square the foundation lines of a house? _____
7. What is the length of your notebook? _____ inches.
8. What is the weight of your math book? _____ lbs. _____ grams
9. What is the height of your desk? _____ in. _____ cm.
10. What is the length of the chalkboard in your room? Give your answers in meters. _____

BUILDING MAINTENANCE

LEARNING ACTIVITY SHEET 38--WHICH IS WHICH?

UNIT IX--MEASUREMENT

Directions: Put each of the following measures into the right category.

1. 42 inches
2. 9 cu. yds. of concrete
3. 1,450 square feet
4. 39 meters
5. 82 centimeters
6. 72 yards
7. 50 lbs. of nails
8. 2,450 square feet
9. 12 cu. yds. of sand
10. 42 ft. of wire
11. 63 ft. of pipe
12. 55 degrees F.
13. 15 gallons of paint
14. 90 degrees F.
15. 2 pints of sealer
16. 4 grams of glue

	VOLUME	LENGTH	AREA	WEIGHT	TEMPERATURE
1.					
2.					
3.					
4.					
5.					
6.					
7.					
8.					
9.					
10.					
11.					
12.					
13.					
14.					
15.					
16.					

BUILDING MAINTENANCE

LEARNING ACTIVITY SHEET 39--CONVERTING MEASUREMENTS

UNIT IX--MEASUREMENT

Directions: Convert each of the following measurements. (To change a larger unit--divide. To change a smaller unit--multiply.)

MEASURES TO USE	(approximately)
3 ft. = 1 yd.	39 in. = 1 meter
12 in. = 1 ft.	2/5 in. = 1 centimeter
36 in. = 1 yd.	1 meter = 1000 millimeters
	1 meter = 100 centimeters
	1 centimeter = 10 mm.

A.

1. 156 in. = _____ yards
2. 17 yds. = _____ inches
3. 78 in. = _____ meters
4. 5 cm. = _____ inches
5. 80 mm. = _____ cm.
6. 192 in. = _____ feet
7. 48 ft. = _____ yards
8. 8 in. = _____ cm.
9. 19 meters = _____ inches
10. 16 yds. = _____ inches
11. 126 in. = _____ yds.
12. 2.6 meters = _____ cm.
13. 5.6 cm. = _____ mm.
14. 52 ft. = _____ yds.
15. 86 in. = _____ ft.
16. 126 in. = _____ ft.
17. 66 yds. = _____ in.
18. 25 cm. = _____ meters

19. 30 cm. = _____ in.

20. 26 meters = _____ in.

Measure different items in your classroom with both a metric ruler and an English ruler.

	METRIC MEASURE	ENGLISH MEASURE
B. 1. Desk		
(a) height		
(b) width		
(c) length		
2. Table		
(a) height		
(b) width		
(c) length		
3. Room (width)		
4. Chalkboard		
(a) length		
(b) width		

BUILDING MAINTENANCE

LEARNING ACTIVITY SHEET 40--LINEAR MEASURE

UNIT IX--MEASUREMENT

1. Use a ruler to measure each of the following lines. Determine the length to the nearest 1/8 of an inch.

_____ a. _____

_____ b. _____

_____ c. _____

_____ d. _____

_____ e. _____

2. Use a metric ruler to measure each of the following lines. Determine the length to the nearest millimeter.

_____ a. _____

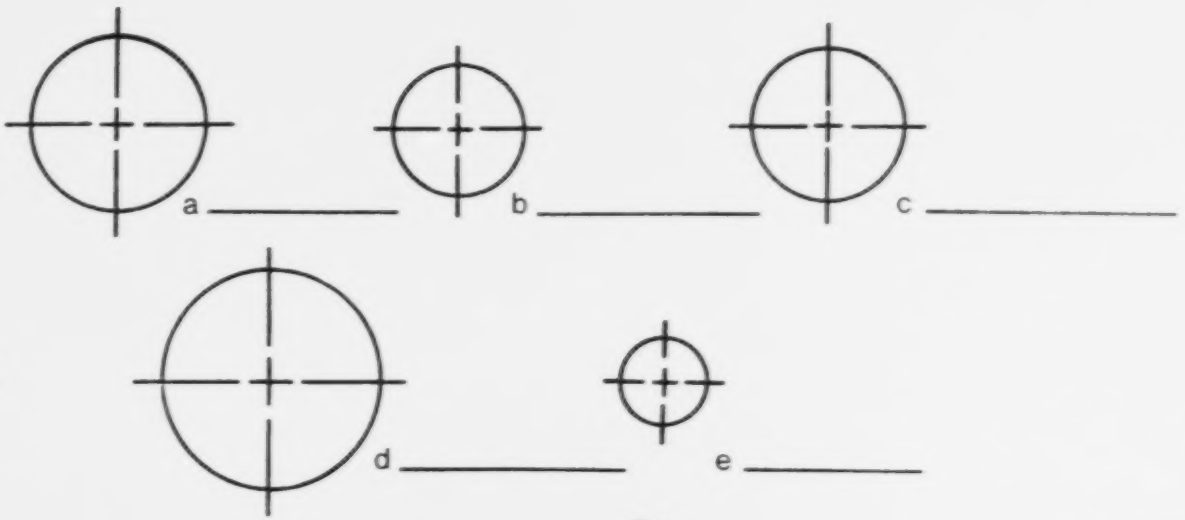
_____ b. _____

_____ c. _____

_____ d. _____

_____ e. _____

3. Use a caliper or ruler to determine the diameter, correct to the nearest 1/16 inch, of each of the bored holes shown below.



4. Find the perimeter of each of the following squares.

a. Side = 9" _____
b. Side = 14" _____
c. Side = 20" _____
d. Side = 142" _____
c. Side = 4' 6" _____

f. Side = 5' 2" _____
g. Side = 22' 3" _____
h. Side = 1' 7" _____
g. Side = 37" _____
h. Side = 13 m _____

5. Find the perimeter of each of the following rectangles.

a. Length = 7', Width = 5' _____
b. Length = 6", Width = 4" _____
c. Length = 5', Width = 3' _____
d. Length = 14', Width = 10' _____
e. Length = 27", Width = 15" _____

BUILDING MAINTENANCE

LEARNING ACTIVITY SHEET 41--ANGLES

UNIT IX--MEASUREMENT

Directions: Draw angles for the following sizes. You should be correct within 2 degrees.

1. 80 degrees

2. 50 degrees

3. 45 degrees

4. 35 degrees

5. 21 degrees

6. 10 degrees

7. 19 degrees

8. 120 degrees

9. 55 degrees

10. 130 degrees

11. 90 degrees

12. 180 degrees

BUILDING MAINTENANCE

LEARNING ACTIVITY SHEET 42--FINDING PERIMETERS

UNIT IX--MEASUREMENT

Directions: Find the perimeter of the following squares. The formula is P = 4s.

1. How many feet of fence will it take to go around a yard if it is 35 feet on one side? _____

2. What is the perimeter of a patio that is 10 feet square? _____

What are the perimeters of the rectangles in the following problems? The formula is P = 2(L + W).

3. How many feet of baseboard would it take for a room that is 14' x 12'? _____

4. How many inches would it be around a picture frame that is 16" x 20"? _____

Find the circumference of the following circles. c = d, π = 3.14, d = diameter.

5. What is the circumference of a 2" water pipe? _____

6. What is the distance around a table that is 4 feet in diameter? _____

BUILDING MAINTENANCE

LEARNING ACTIVITY SHEET 43--PERIMETERS

UNIT IX--MEASUREMENT

Directions: Read and work the following problems.

1. If a room is 13 feet long and 9 feet wide, what is the perimeter of the room? _____

2. Each floor tile is square. One side measures 12 inches. What is the perimeter of one floor tile? _____

3. The window measures five feet high and 2 1/2 feet wide. What is the perimeter of the window? _____

4. The hallway is 20 feet long and 3 1/2 feet wide. Determine the perimeter of the hallway. _____

5. A game room is built in a square. If one side of the room measures 12 feet, what is the perimeter of the room?

   _____

6. A fish pond has been constructed in the backyard. If the diameter of the pond is 6 feet, what is the circumference?

   _____

7. A swimming pool is to be constructed in the shape of a rectangle. If the length is 27 feet and the width is 13 feet, what will be the perimeter of the pool? _____

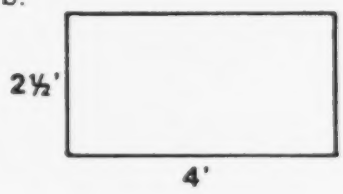
8. A spiral staircase is being built in a new home. The staircase will be enclosed by circular walls. If the diameter of the staircase enclosure is 4 feet, what will be the circumference? _____

9. The office building under construction has outside measurements of 240 feet (length) and 175 feet (width). What will be the outside perimeter of the building? _____

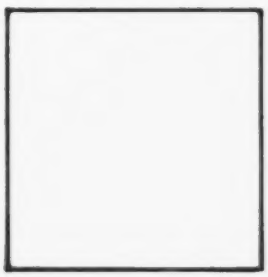
10. Determine the perimeter of each of the following geometric figures using the measurements given.

_____ a.

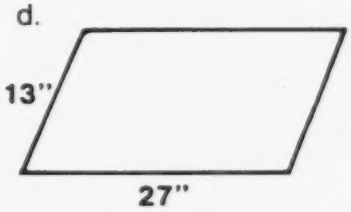
_____ b.



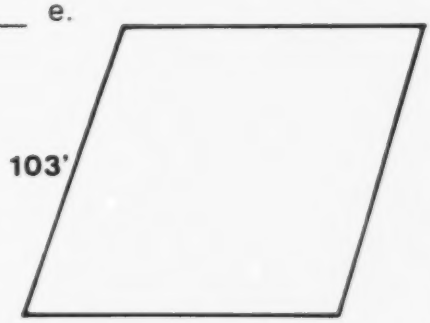
_____ c.



_____ d.



_____ e.



BUILDING MAINTENANCE

LEARNING ACTIVITY SHEET 44--AREA

UNIT IX--MEASUREMENT

Directions: Find the areas in the following word problems. The formula for finding the area of a rectangle is length times width (L x W).

$$\begin{array}{r} 4 \text{ feet} \\ \times\ 3 \text{ feet} \\ \hline 12 \text{ square feet} \end{array}$$

1. Find the area of the total building if it has the following measurements: the storage room is 12' by 14', the bathroom is 5' by 7', the break room is 8' by 10', and the work area is 9' by 11', the office work area is 10' by 7', and the garage is 12' by 15'. _____

2. Find the area of a building that is 25 ft. wide and 42 ft. long. _____

3. What is the area of a warehouse that is 64" wide and 168" long? _____

Solve the following problems concerning the number of yards of concrete. The formula is $\frac{\text{length x width x thickness x concrete}}{27 \text{ (no. of cu. ft. in a cu. yd.)}}$

EXAMPLE: How many cubic yards of concrete will be needed to fill the following forms if the house will be 10 ft. long and 9 ft. wide, and the concrete will be 4' thick?

$$\frac{10 \times 9 \times 1/3}{27} = 1.1 \text{ cubic yards}$$

STEP 1

$$\begin{array}{r} 10 \\ \times\ 9 \\ \hline 90 \end{array}$$

STEP 2

$$3 \overline{)\ 90} \quad \begin{array}{r} 30 \\ 90 \\ \hline 0 \end{array}$$

STEP 3

$$27 \overline{)\ 30.0} \quad \begin{array}{r} 1.1 \\ 27 \\ \hline 3.0 \end{array}$$

4. How many cubic yards of concrete will be needed to pour a slab 40 ft. long and 32 ft. wide and 4" thick? _____

5. How many cubic yards of concrete will be needed to pour a slab 32 ft. long and 27 ft. wide and 4" thick? _____

Solve the following word problems concerning board feet by using the following formula.

$$\text{(Board Feet)} \quad \frac{\text{Number of pieces x thickness in inches x width in inches x length}}{\text{Divided by 12}}$$

EXAMPLE: How many board feet are in 10 pieces of 1 x 12 that are 8 feet long?

$$\frac{10 \times 1 \times 12 \times 8}{12} = 80/1 = 80 \text{ board feet}$$

6. How many board feet are in 14 pieces of 2 x 4 that are 12 feet long? _____

7. How many board feet are in 30 pieces of 2 x 4 that are 16 feet long? _____

8. How many board feet are in 12 pieces of 2 x 10 that are 8 feet long? _____

BUILDING MAINTENANCE

LEARNING ACTIVITY SHEET 45--AREA

UNIT IX--MEASUREMENT

Directions: Read and work the following problems.

1. Find the area of a room if the length is 20 feet and the width is 14 feet. _____

2. How many square feet of floor tile would you need to cover the floor of a room that is 12 feet square? _____

3. What would be the area of a swimming pool 15 feet wide and 20 feet long? _____

4. How many square feet of shingles would you need to cover a flat roof measuring 125 feet long and 75 feet wide?
_____

5. What is the area of floor space inside a building if the outside measurements are 140 feet long and 90 feet wide? Allow for 6-inch walls. _____

6. The door opening is 6 1/2 feet high and 3 feet wide. What is the area of the door opening? _____

7. How many square feet of carpet will be needed to carpet a room 11 feet wide and 16 feet long? Do not allow for waste.
_____

8. How many square feet of plastic counter topping would be needed to cover a counter 12 feet long and 2 3/4 feet wide?
_____

9. What is the area of a sheet of plywood 4 feet wide and 8 feet long? _____

10. What is the area of a deck built in the shape of a parallelogram whose base is 18 feet and height is 10 feet?
_____

BUILDING MAINTENANCE

LEARNING ACTIVITY SHEET 46--WEIGHT

UNIT IX--MEASUREMENT

Directions: Read and work the following problems.

1. If a sheet of copper weighs 16 ounces per square foot, how much would a sheet of copper 8' x 4' 6" weigh? _____

2. How much would a 10" x 4 3/4" beam , 20 feet long weigh if it weighs 35 pounds per linear foot? _____

3. When you lay wood shingles 4 1/2 inches to the weather, you allow 5 3/4 pounds of 4d nails for each square of shingles (100 square feet). How many pounds of shingle nails would you need in order to lay 32 1/2 squares of shingles at this exposure? _____

4. A box of 8d common nails weighs 50 pounds. An order is made for 1 1/2 tons of 8d common nails for $184.50. What would be the cost for each box of nails? _____

5. A roof is being constructed with 50 square. If the shingles weigh 280 pounds per square (100 square feet), how much will the shingles needed to cover the roof weigh? _____

6. If you have a footing 28 square feet in area supporting a tank which when completely filled weighs 40,000 pounds, how much weight per square foot will the footing be supporting? _____

7. In building a structure, you must keep in mind the safe bearing capacity of the soil. The safe capacity is 2,500 pounds per square foot. What size area would you need to sustain a structure of 50,000 pounds? _____

8. It is estimated that it takes 20 pounds of 8d common wire nails to put down 1,000 board feet of subflooring. How many pounds of nails will it take to put down 20,000 board feet of sheathing? _____

9. Write the following as indicated:

   a. 24 ounces as pounds _____

   b. 12 tons as pounds _____

   c. 3 pounds as ounces _____

10. Write the following metric weights as indicated:

   a. 30 milligrams as centigrams _____

   b. 2 grams as decagrams _____

   c. 14 kilograms as hectograms _____

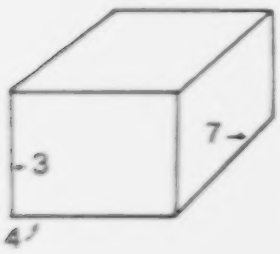
BUILDING MAINTENANCE

LEARNING ACTIVITY SHEET 47--FINDING VOLUME

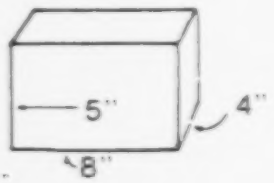
UNIT IX--MEASUREMENT

Directions: This information should give you knowledge in determining the size of objects and the amount of volume contained. Use the following formula to calculate the volumes below: V = lwh

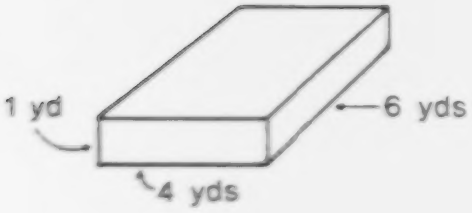
1.



2.



3.



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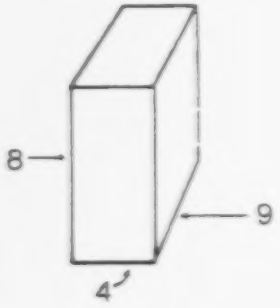

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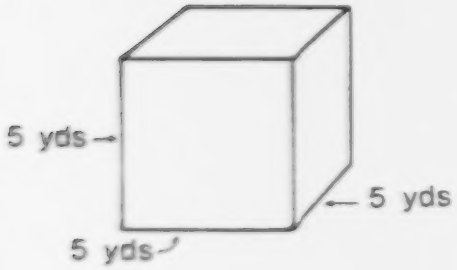

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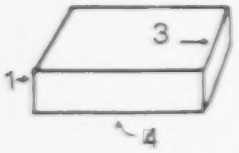


BUILDING MAINTENANCE

LEARNING ACTIVITY SHEET 48--ADDING MEASUREMENTS

UNIT IX--MEASUREMENT

A. Add and simplify the following problems.

1. 8 lbs. 3 oz.
   + 4 lbs. 2 oz.

2. 1 lb. 3 oz.
   + 5 lbs. 11 oz.

3. 8 T. 300 lbs.
   2 T. 400 lbs.
   + 4 T. 900 lbs.

4. 5 T. 500 lbs.
   800 lbs.
   + 6 T. 300 lbs.

5. 3 lbs. 5 oz.
   4 lbs. 2 oz.
   + 8 lbs. 9 oz.

6. 4 lbs. 15 oz.
   11 oz.
   + 5 lbs. 8 oz.

B. Subtract and simplify the following problems.

7. 6 lbs. 9 oz.
   - 3 lbs. 7 oz.

8. 10 lbs. 13 oz.
   - 4 lbs. 5 oz.

9. 31 lbs. 8 oz.
   - 8 lbs. 5 oz.

10. 32 T. 503 lbs.
    - 15 T. 345 lbs.

11. 7 lbs. 8 oz.
    - 3 lbs. 7 oz.

12. 28 T. 800 lbs.
    - 10 T. 400 lbs.

BUILDING MAINTENANCE

LEARNING ACTIVITY SHEET 49--MEASURING

UNIT IX--MEASUREMENT

Directions: Answer the following questions by referring to the chart provided on the following page.

1. How long is an 8d nail? _____
2. How long is a 16d nail? _____
3. How long is a 40d nail? _____
4. What is the diameter of the head of a common 6d nail? _____
5. What is the diameter of the head of a 16d nail? _____
6. What gauge is a 4d nail? _____
7. What gauge is a 10d nail? _____
8. What gauge is a 12d nail? _____
9. Approximately how many 4d nails make a pound? _____
10. Approximately how many 8d nails make a pound? _____
11. How many 16d nails does it take to make 10 pounds of nails? _____
12. How many 60d nails would there be in a 50 lb. box of that size nails? _____

COMMON NAILS

COMMON NAILS REFERENCE TABLE

SIZE	LENGTH AND GAUGE	DIAMETER HEAD	APPROX NO. TO POUNDS	SIZE	LENGTH AND GAUGE	DIAMETER HEAD	APPROX NO. TO POUNDS
2d	1 inch..... No. 15	11/64	845	10d	3 inch..... No. 9	8/16	65
3d	1¼ inch.... No. 14	13/64	540	12d	3¼ inch.... No. 9	8/16	60
4d	1½ inch.... No. 12½	1/4	290	16d	3½ inch.... No. 8	11/32	45
5d	1 3/4 inch.. No. 12½	1/4	250	20d	4 inch..... No. 6	13/32	30
6d	2 inch..... No. 11½	17/64	165	30d	4½ inch.... No. 5	7/16	20
7d	2¼ inch..... No. 11½	17/64	150	40d	5 inch..... No. 4	15/32	17
8d	2½ inch..... No. 10¼	9/32	100	50d	5½ inch.... No. 3	1/2	13
9d	2 3/4 inch.. No. 10¼	9/32	90	60d	6 inch..... No. 2	17/32	10

DIAM. OF NAILS FROM 2 TO 16

BUILDING MAINTENANCE

LEARNING ACTIVITY SHEET 50--TEMPERATURE

UNIT IX--MEASUREMENT

Directions: Use the thermometer scale on the following page to solve the following problems.

1. Record the comparisons:

   a. 46 degrees F = _____ °C

   b. 15 degrees C = _____ °F

   c. 32 degrees F = _____ °C

   d. 60 degrees C = _____ °F

   e. 50 degrees C = _____ °F

2. What is the boiling point for:

   a. Fahrenheit _____

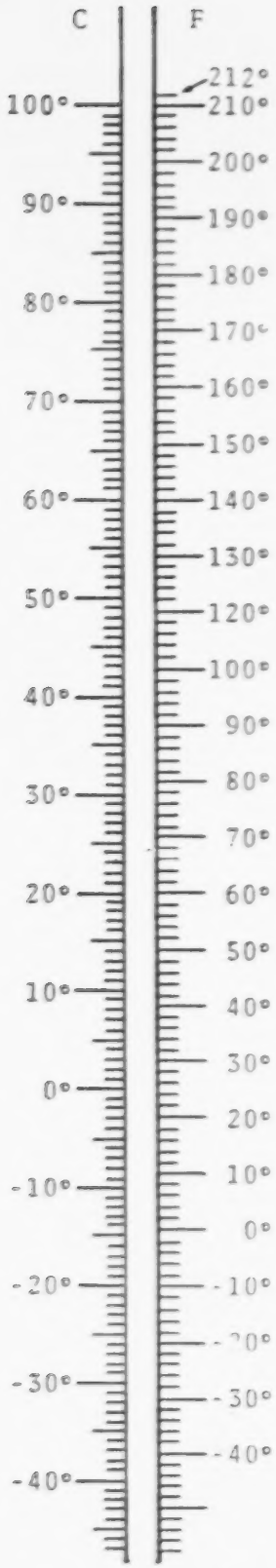
   b. Centigrade _____

3. What is the freezing point for:

   a. Fahrenheit _____

   b. Centigrade _____

4. If the temperature is 90 degrees C and drops 50 degrees, what is the temperature? _____


C
F
212°
100°
210°
200°
90°
190°
180°
80°
170°
160°
70°
150°
140°
60°
130°
50°
120°
100°
40°
90°
80°
30°
70°
20°
60°
50°
10°
40°
30°
0°
20°
10°
-10°
0°
-20°
-10°
-30°
-30°
-40°
-40°